THE OBSTRUCTED INTUSSUSCEPTION IN CHILDHOOD

by

S. R. POTTS and N. MURPHY

The Royal Belfast Hospital for Sick Children, Belfast

SUMMARY

In intussusception in early childhood, reduction by barium enema is the treatment of choice. In late cases when there is air and fluid distension of the small bowel on plain x-ray, barium enema is less useful. Generally 20-25% of childhood intussusception presents in this way. We have reviewed the experience of 65 intussusceptions at the Royal Belfast Hospital for Sick Children over the past 5 years and found only one successful barium enema reduction in 22 obstructed intussusceptions.

INTRODUCTION

The success rate of barium enema reduction of intussusception in childhood varies in reported series, the best results corresponding with early referral and diagnosis. Presentation with a history in excess of 24 hours reduces by about 50% the success rate of barium enema reduction.[1, 2, 3] When dealing with obstructed intussusception, successful use of the enema is the exception rather than the rule.[4, 5, 6] The fact that this situation is generally inferred rather than stated as a statistic has prompted this review, and special attention is paid to those cases where air and fluid distension of the small bowel has developed.

METHODS

The records of all cases of intussusception presenting at the Royal Belfast Hospital for Sick Children from January 1978 to February 1983 were inspected. Erect and supine abdominal films were examined to determine those in which small bowel obstruction (gaseous distension with fluid levels) was established.

The success, failure or omission of barium enema was noted. The operation note was examined for details regarding intestinal resection or alternative diagnosis. The length of history on referral and the age and sex of the patients was also recorded.

RESULTS

There were 62 children (44 boys, 18 girls) with 65 intussusceptions. Age, distribution and length of history at referral are presented in Tables 1 and 2.

TABLE 1

Age at presentation (months)

	0—3	3—6	6—12	12—24	>24
Number of cases	18	12	20	9	6

TABLE 2

Length of history at presentation (hours)

	0—12	12—24	24—36	36—48	>48
Number of cases	12	19	8	10	16
Number resected	3	5	2	3	4

In the 43 cases with no radiological evidence of obstruction, 32 enemas were given with 22 successes.

Established obstruction as defined was present in 22 cases, 13 of which had an enema, with only one success. The remaining 9 cases were taken directly to operation because of their clinical status. The profile of all cases is presented in Table 3. Intestinal resection was carried out in 17 instances, 4 of which did not present with obstruction clinically or radiologically. Ten enemas were performed in the resected group, 4 in the unobstructed subgroup and 6 in the obstructed subgroup.

TABLE 3

Profile of 65 cases of childhood intussusception

Type of Intussusception	No. of cases	Intestinal obstruction	Intestinal resection	Lead points	Barium enema employed	Barium enema failed
Ileo-colic	48	11	7	—	35	16
Ileo-ileo-colic	14	8	7	—	8	8
Ileo-ileal	3	3	3	3	2	2

Passage of blood per rectum occurred in 30 of the 65 cases (46%). Rectal bleeding was observed in 9 of the 17 cases requiring resection (53%). Thus the appearance of rectal bleeding gave no indication of the viability of the bowel.

DISCUSSION

In this series we have presented our experience with intussusception directed towards those with obstruction and have shown that reduction by barium enema is only occasionally successful in these patients. Previous reports have not made a clear differentiation between obstructed and nonobstructed cases with regard to the efficacy of barium enema.[1, 2, 3, 4, 5, 6, 7] A diagnosis of intussusception can be made in the majority of cases from the history and from plain abdominal x-ray films. The use of barium enema in the obstructed subgroup of childhood intussusception is called into question because of its low therapeutic success rate. The argument that the enema may, by even partial reduction of the intussusception, facilitate operation, is invalid, as adequate access to the left side of the abdomen and pelvis in a child can be gained through a transverse right upper quadrant muscle-cutting incision.

In our series 50% of the cases presented with a history in excess of 24 hours and in 25% it was over 48 hours. It is generally recognised that the success rate in reducing childhood intussusception with barium enema after 24 hours is much reduced.[2, 5] Thus half of our cases presented unfavourably. In addition, increasing length of history carries the risk of impaired viability of the bowel beyond that expected from simple increase in intraluminal pressure. At particular risk in this situation are those under 6 months of age.[8]

We conclude that those with limited experience of intussusception should treat obstructed intussusception as a case requiring immediate operative management. They are likely to find barium enema a therapeutic disappointment which loses valuable time in circumstances where quick intervention may prevent the necessity for an intestinal resection.

REFERENCES

1 Gierup J, Jorulf H, Livaditis A. Management of intussusception in infants and children: a survey based on 288 consecutive cases. *Paediatrics* 1972; **50**: 535-545.

2 Eklof OA, Johanson L, Lohr G. Childhood intussusception. Hydrostatic reducibility and incidence of leading points in different age groups. *Paediatr Radiol* 1980; **10**: 83-86.

3 Freund H, Hurvitz H, Schiller M. Etiologic and therapeutic aspects of intussusception in childhood. *Am J Surg* 1977; **134**: 272-274.

4 Ein SH, Stephens CA. Intussusception. 354 cases in 10 years. *J Paediatr Surg* 1971; **6**: 16.

5 Hutchison IF, Olayiwola B, Young DG. Intussusception in infancy and childhood. *Br J Surg* 1980; **67**: 209-212.

6 Rosenkrantz JG, Cox JA, Silverman FN, Martin LW. Intussusception in the 70s: indication for operation. *J Paediatr Surg* 1977; **12**: 367-373.

7 Ein SH. Leading points in childhood intussusception. *J Paediatr Surg* 1976; **11**: 209.

8 Mercer S, Carpenter B. Mechanism of perforation occurring in the intussusception during hydrostatic reduction of intussusception. *Can J Surg* 1982; **25**: 481-483.